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EXAMINER	
BELL, BRUCE F	

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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte DONALD T. CRONCE

Appeal 2008-3878
Application 10/675,598
Technology Center 1700

Decided: September 16, 2008

Before CHUNG K. PAK, CHARLES F. WARREN, and
JEFFREY T. SMITH, *Administrative Patent Judges*.

WARREN, *Administrative Patent Judge*.

DECISION ON APPEAL

Applicant appeals to the Board from the decision of the Primary Examiner finally rejecting claims 1 through 9 and 12 through 20 in the Office Action mailed December 29, 2006, and subsequent refusal to allow claim 18 as amended in the Amendment filed March 13, 2007 that was entered in the Advisory Action mailed April 3, 2007. 35 U.S.C. §§ 6 and 134(a) (2002); 37 C.F.R. § 41.31(a) (2006).

We affirm the decision of the Primary Examiner.

Claims 1 and 12 illustrate Appellant's invention of an article marking system, and are representative of the claims on appeal:

1. A power generating system, comprising:

a decomposition chamber;

a solid impellant material containing at least one of a peroxide and a superoxide;

a solvent in the decomposition chamber to liquefy and chemically decompose the solid impellant material, thereby releasing thermal energy;

a power generator to convert the thermal energy into at least one of mechanical energy and electrical energy; and

a power transmission to transfer the converted energy for performing work.

12. A process for releasing energy in an energy source, comprising:

providing a decomposition chamber containing a solvent;

dissolving a solid impellant material containing at least one of a peroxide and a superoxide;

solubilizing the solid impellant material in the solvent to liquefy and chemically decompose the solid impellant material into a liquefied peroxide for releasing thermal energy;

converting the thermal energy into at least one of mechanical energy and electrical energy; and

transferring the converted energy for performing work.

The Examiner relies upon the evidence in these references (Ans. 3):

Russell	US 4,867,902	Sep. 19, 1989
Rusek	US 6,255,009 B1	Jul. 3, 2001

Appellants request review of the ground of rejection of claims 1 through 9 and 12 through 20 under 35 U.S.C. § 103(a) as unpatentable over Rusek in combination with Russell advanced on appeal. Ans. 3; App. Br. 6.

Appellant argues the claims as a group. App. Br. in entirety. Thus, we decide this appeal based on independent claims 1 and 12. 37 C.F.R. § 41.37(c)(1)(vii) (2006).

The principal issue in this appeal is whether the Examiner has carried the burden of establishing a prima facie case in the ground of rejection advanced on appeal which, of course, turns on the issues addressed below.

Considering first claim 1, we determine the plain language of this claim specifies a system comprising at least any system of apparatus components capable of generating power comprising at least any manner of decomposition chamber apparatus component capable of accommodating in any manner the dissolution and decomposition of any solid impellant[1] into thermal energy; any manner of power generator apparatus component capable of converting the thermal energy into at least one of mechanical and electrical energy; and any manner of power transmission apparatus component apparatus component capable of transferring the mechanical or electrical energy to perform any manner of work. We determine the solid impellant material and the solvent capable of liquefying the impellant constitute materials on which the system of apparatus components performs work in generating power and thus, do not confer a structural limitation on the claimed system. *See, e.g., In re Otto*, 312 F.2d 937, 939-40 (CCPA 1963); *In re Rishoi*, 197 F.2d 342, 344-45 (CCPA 1952) ("[T]here is no patentable combination between a device and the material upon which it works."); *In re Young*, 75 F.2d 996 (CCPA 1935); *In re Smith*, 36 F.2d 302,

[1] Appellants disclose that "[a]n impellant is a chemical which contains energy releasable by decomposition without combustion." Spec. 6:8-9.

303 (CCPA 1929)("It might be argued that the invention here consists in a combination of extra length carbons with the old machine, and that such a combination is patentable. It will be borne in mind that it has been long established that a person may not patent a combination of device and material upon which the device works, nor limit other persons from the use of similar material by claiming a device patent.").

The plain language of claim 12 specifies any process for releasing energy from any energy source comprising at least the steps of, among other things, dissolving any solid impellant material containing at least any amount of one of any peroxide and any superoxide, in any solvent that will liquefied and chemically decompose the solid impellant to release thermal energy in any manner of decomposition chamber apparatus component; converting the thermal energy in any manner into at least one of mechanical and electrical energy; and transferring the converted energy in any manner for performing work.

In both of these claims, the transitional term "comprising" opens the claims to encompass other system and process apparatus components, steps, and materials. *See, e.g., Vehicular Technologies Corp. v. Titan Wheel Int'l Inc.*, 212 F.3d 1377, 1383 (Fed. Cir. 2000); *Genentech Inc. v. Chiron Corp.*, 112 F.3d 495, 501 (Fed. Cir. 1997); *In re Baxter*, 656 F.2d 679, 686 (CCPA 1981) ("As long as one of the monomers in the reaction is propylene, any other monomer may be present, because the term 'comprises' permits the *inclusion* of other steps, elements, or materials.").

There is no dispute that Rusek would have disclosed to one of ordinary skill in this art the apparatus components specified in claim 1 and in claim 12, as these claims are interpreted above. Ans. 3-5 and 8; App. Br. 8.

We determine that Rusek would have otherwise disclosed to one of ordinary skill in this art the conversion of an aqueous solution containing hydrogen peroxide as impellant to superheated steam comprising water vapor and oxygen, that is, to thermal energy, in a methods of generating mechanical and electrical power from that thermal energy using apparatus components of a power generation system. Rusek, e.g., col. 1, ll. 23-30, col. 2, ll. 47-51, col. 3, l. 14 to col. 6, l. 36, and Figs. 1-2.

We determine that Russell would have evinced that

> [i]t is well known in the art to use alkali metal and alkaline earth metal peroxide and superoxide chemicals as oxygen sources. Methods for releasing the oxygen have included introducing the chemical into a water containing reactor. For example, potassium superoxide is well known to react vigorously and almost instantly with water to evolve heat and oxygen with potassium hydroxide as the by-product.

Russell col. 1, ll. 14-21; see also col. 1, ll. 22-28 and 31-33. Russell further evinces it was known in the art with respect to source respirators and rebreathers that "[i]n the case of potassium superoxide enough exotherm heat is created to require external heat exchanges on the potassium superoxide canisters. Russell col. 1, ll. 46-49.

We determine that Russell would have disclosed to one of ordinary skill in this art that the microencapsulation of solid oxygen generating compounds, such as potassium peroxide and superoxide, in a water swellable capsule material controls the reactivity of these compounds with respect to the generation of heat when mixed with water. Russell, e.g.,

col. 1, ll. 5-11, col. 2, ll. 21-27, and col. 4, ll. 31-55. The micro-encapsulation material absorbs moisture which permits additional moisture to permeate the wall of the capsule and react with the oxygenating compound as well as rupture the wall of the capsule for further exposure to moisture, thus controlling the release rate of heat and oxygen. Russell, e.g., abstract and col. 3, l. 6 to col. 4, l. 30.

We determine the combined teachings of Rusek and Russell, the scope of which we determined above, provide sufficient evidence supporting the Examiner's case that the claimed invention encompassed by claims 1 and 12, as we interpreted this claim above, would have been prima facie obviousness to one of ordinary skill in the power generating arts familiar with power generating methods and systems that use impellants to generate thermal energy. Considering first the power generating system of apparatus components specified in claim 1, there is no dispute that Rusek alone, prima facie, teaches power generating systems that fall within the claimed system.

Turning now to claim 12, we agree with the Examiner that, prima facie, one of ordinary skill in this art armed with knowledge in the art would have exchanged the aqueous hydroperoxide impellant used to generate thermal energy and oxygen by Rusek with aqueous solutions of solid peroxides and superoxides known in the prior art to generate thermal energy and oxygen as evinced by Russell in the reasonable expectation that the aqueous solid peroxide solutions would act as impellants and be converted into mechanical and electrical energy in Rusek's power generation systems. Ans., e.g., 3-4, 5-6, and 12:12-14.

Accordingly, on this record, prima facie, one of ordinary skill in this art routinely following the combined teachings of Rusek and Russell would have reasonably arrived at the claimed inventions encompassed by claims 1 and 12, including all of the limitations thereof arranged as required therein, without recourse to Appellants' Specification. *See, e.g., KSR Int'l Co. v. Teleflex, Inc.*, 127 S. Ct. 1727, 1740 (2007) ("when a patent claims a structure already known in the prior art that is altered by mere substitution of one element for another known in the field, the combination must do more than yield a predictable result"); *In re Siebentritt*, 372 F.2d 566, 567-68 (CCPA 1967) (express suggestion to interchange methods which achieve the same or similar results is not necessary to establish obviousness); *see also In re Kahn*, 441 F.3d 977, 985-88 (Fed. Cir. 2006); *In re O'Farrell*, 853 F.2d 894, 903-04 (Fed. Cir. 1988) ("For obviousness under § 103, all that is required is a reasonable expectation of success." (citations omitted)); *In re Keller*, 642 F.2d 413, 425 (CCPA 1981) (" [T]he test [for obviousness] is what the combined teachings of the references would have suggested to those of ordinary skill in the art."); *In re Sovish*, 769 F.2d 738, 743 (Fed. Cir. 1985) (skill is presumed on the part of one of ordinary skill in the art); *In re Bozek*, 416 F.2d 1385, 1390 (CCPA 1969) ("Having established that this knowledge was in the art, the examiner could then properly rely, as put forth by the solicitor, on a conclusion of obviousness 'from common knowledge and common sense of the person of ordinary skill in the art without any specific hint or suggestion in a particular reference.'").

Upon reconsideration of the record as a whole in light of Appellants' contentions, we are of the opinion that Appellants have not successfully rebutted the prima facie case. We cannot subscribe to Appellants' contentions that one of ordinary skill in this art would not have combined Rusek with the knowledge in the art as evinced by Russell because Russell teaches away from the combination by disclosing microencapsulating the solid peroxide and superoxides in order to control the release of thermal energy therefrom. App. Br. 8-9. Indeed, Russell makes clear that one of ordinary skill in this art would have known that whether the solid peroxide and superoxide is combined with water per se as known in the prior art or in the form of breath moisture, the solid material will react to release thermal energy and oxygen. Thus, this person would have further readily recognized that the solid peroxides and superoxides would act as impellants when combined with water in the same manner as an aqueous solution of hydrogen peroxide, releasing thermal energy which can be converted to mechanical and electrical energy in Rusek's power generation systems. Accordingly, one of ordinary skill in this art would have combined the references on the basis of the release of thermal energy from the aqueous impellant systems disclosed therein, leading this person to use the prior art solid peroxides and superoxides in combination with water in place of Rusek's hydrogen peroxide solutions.

Accordingly, based on our consideration of the totality of the record before us, we have weighed the evidence of obviousness found in the combined teachings of Rusek and Russell with Appellants' countervailing evidence of and argument for nonobviousness and conclude that the claimed

invention encompassed by appealed claims 1 through 9 and 12 through 20 would have been obvious as a matter of law under 35 U.S.C. § 103(a).

The Primary Examiner's decision is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED

tc

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